

# V&V Reference Report

## L2 ASCDS Version : 10.7.1

Observation 21168 - L2 Version 2  
Chandra X-Ray Center

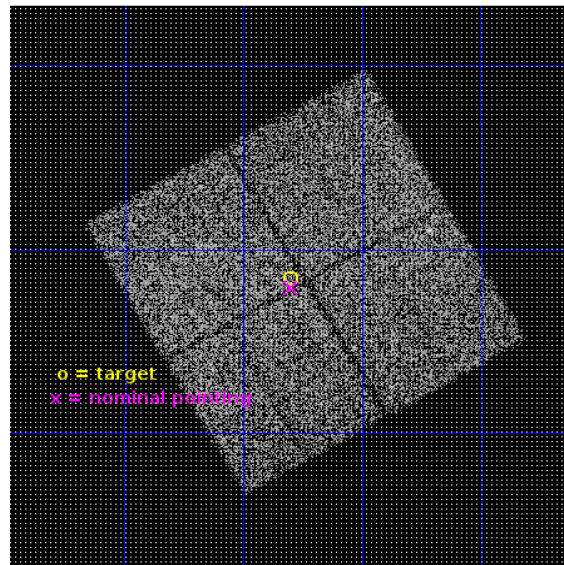
L2 Processing Date : Dec 28 2018

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# 1 Front

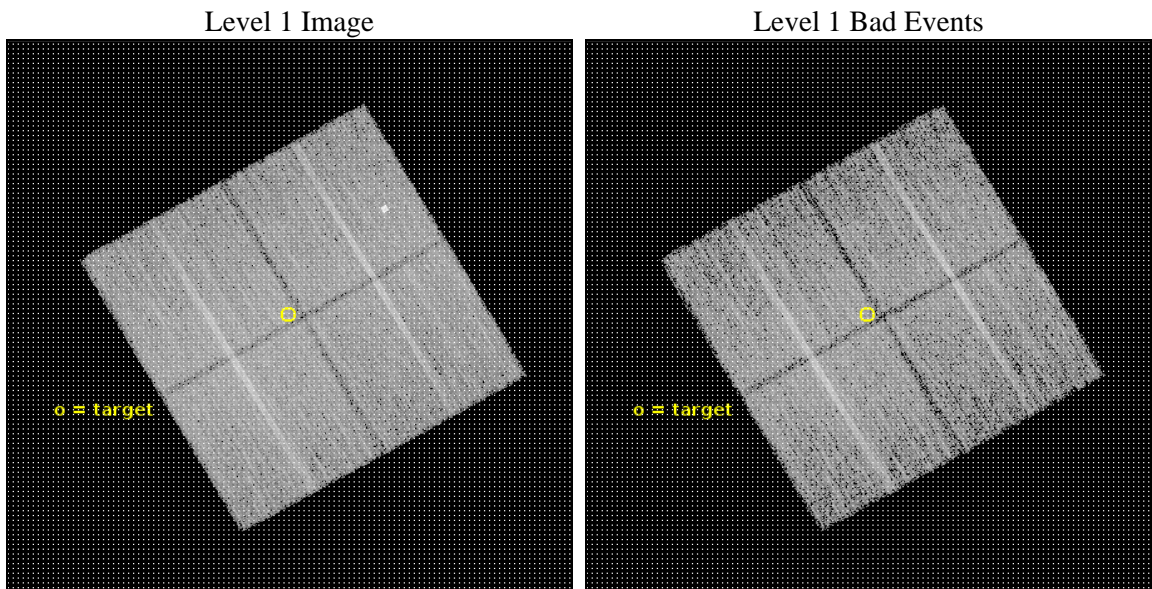
seq_num	201224	Sequence number
obs_id	21168	Observation id
title	Filling The Missing Link In Stellar Magnetic Activity Evolution	Pr
observer	Konstantin Getman	Principal investigator
object	NGC 1960	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	84.075	Observer's specified target RA [deg]
dec_targ	34.14	Observer's specified target Dec [deg]
ra_nom	84.074651303571	Nominal RA [deg]
dec_nom	34.132064355113	Nominal Dec [deg]
roll_nom	240.20888247469	Nominal Roll [deg]
revision	2	Processing version of data
ontime	18069.818148613	Sum of GTIs [s]
livetime	17833.722671695	Livetime [s]
ontime0	18072.959099054	Sum of GTIs [s]
ontime1	18072.959128857	Sum of GTIs [s]
ontime2	18066.677148461	Sum of GTIs [s]
ontime3	18069.818148613	Sum of GTIs [s]
l2events	47368	Number of level 2 events



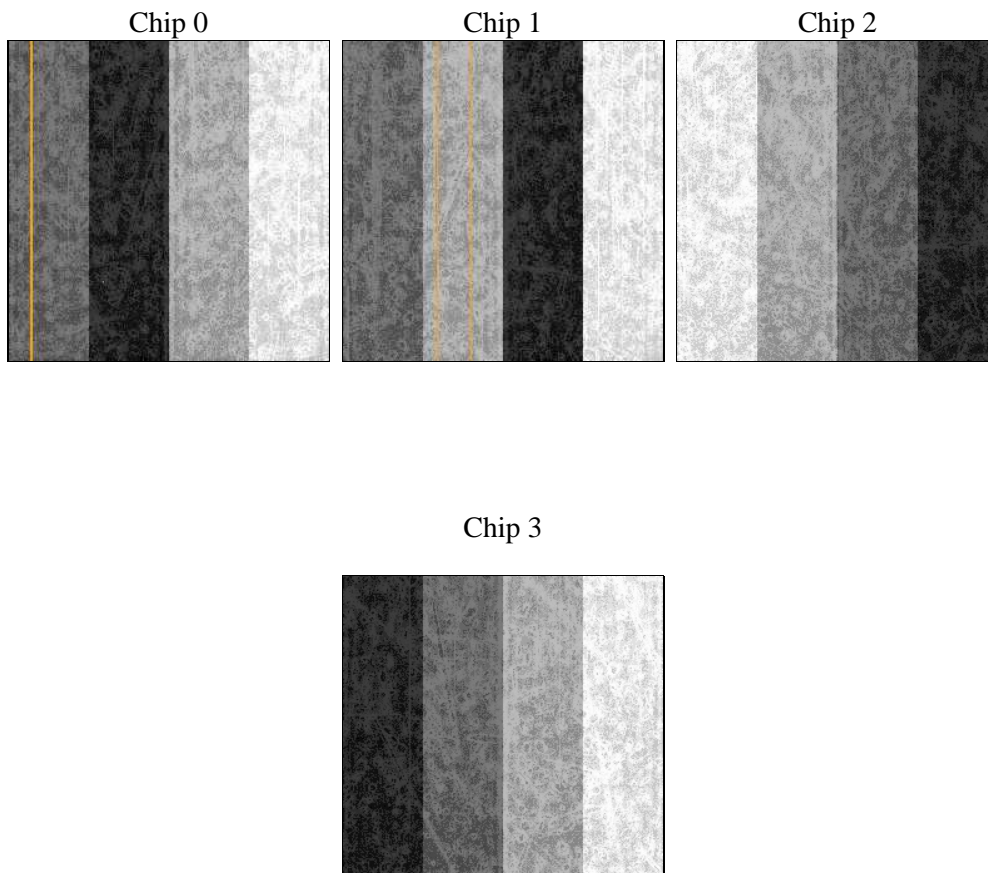
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	18000.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	18069.818148613	Sum of GTIs [s]
caldbver	4.8.2	&#160	ontime0	18072.959099054	Sum of GTIs [s]
date	2018-12-28T17:48:33	Date and time of file creation	ontime1	18072.959128857	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	18066.677148461	Sum of GTIs [s]
			ontime3	18069.818148613	Sum of GTIs [s]
			l1events	516639	Number of level 1 events

### 2.1.4 Events

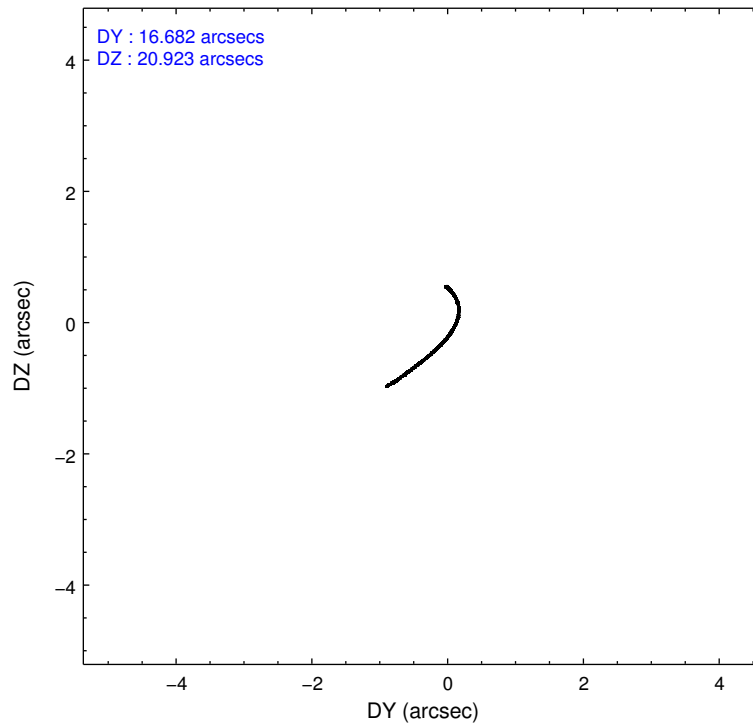
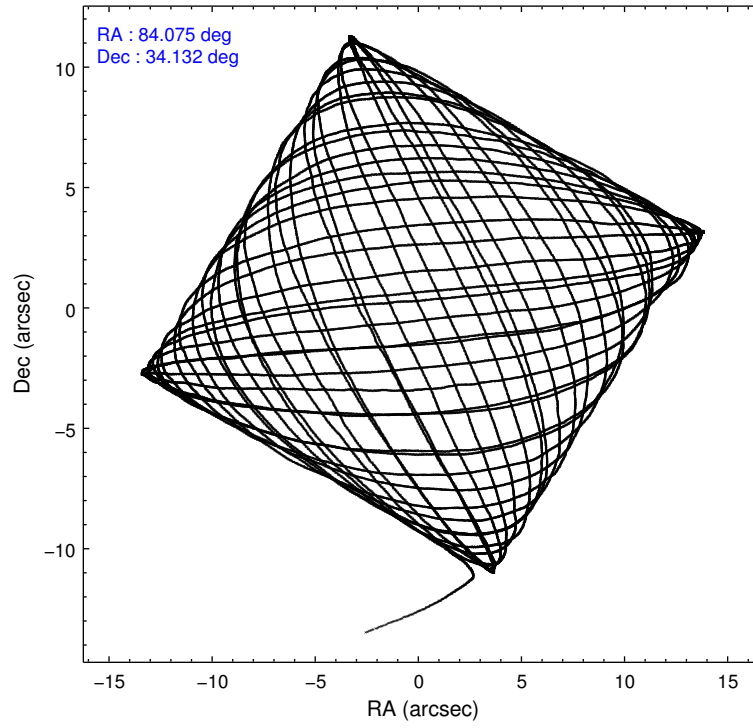
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	121534	125957	136673	132475
rejected events	107077	108709	122686	118753
rejected %	88%	86%	89%	89%

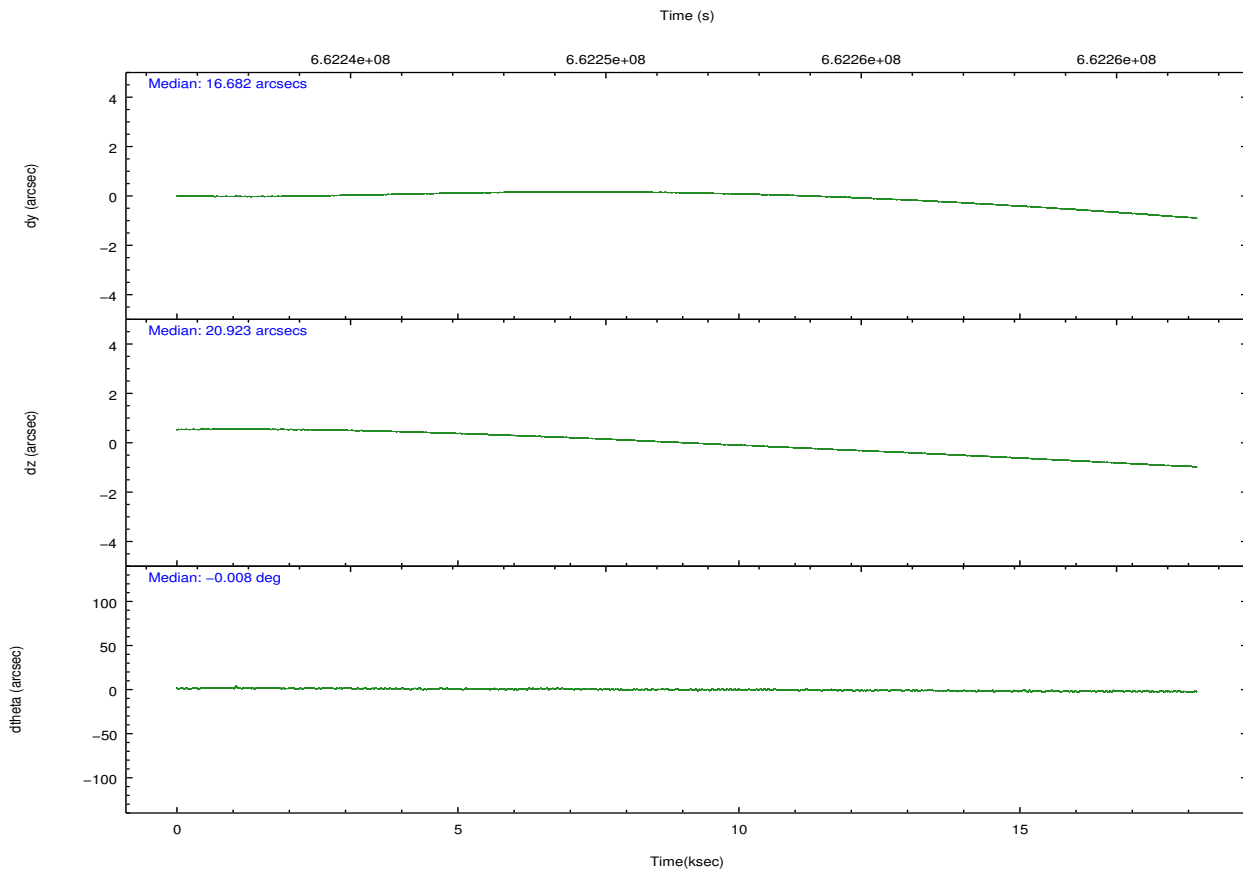
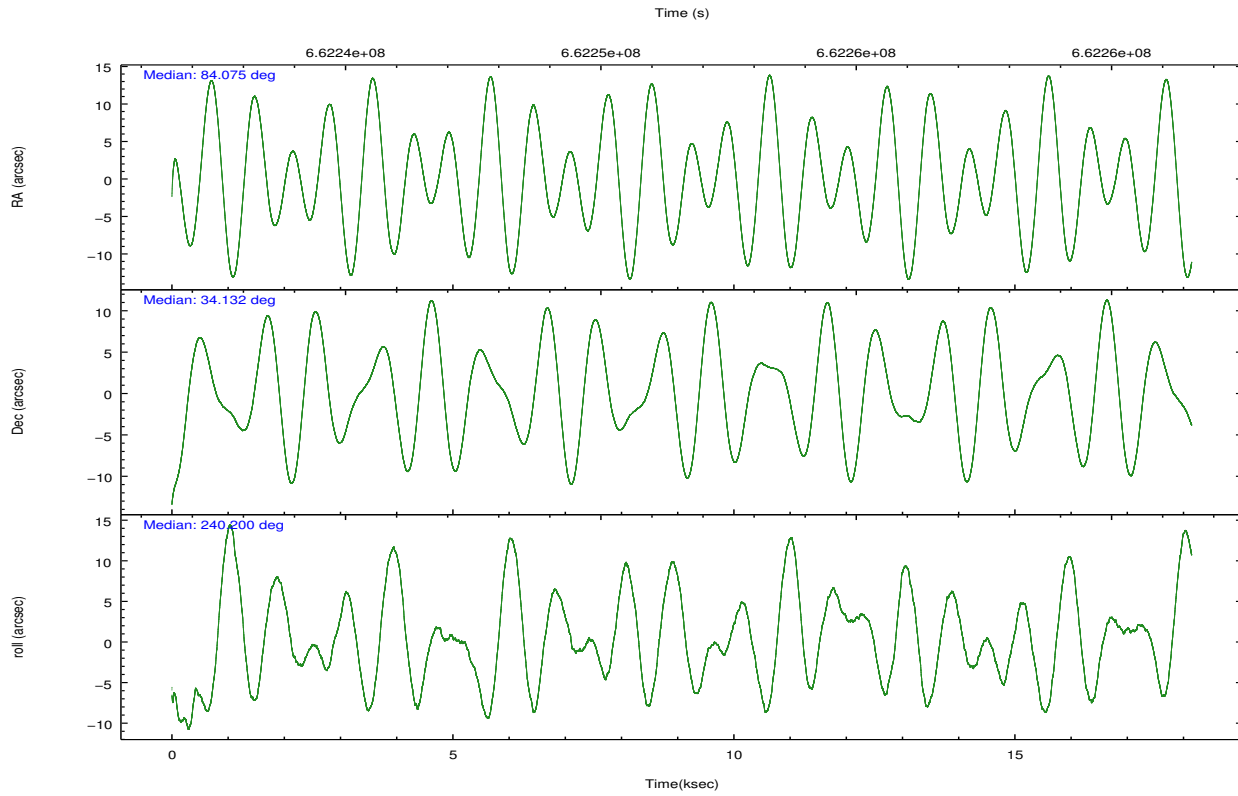
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	5272	7307	5377	5295
	4%	5%	3%	3%
grade 1 events	75	72	63	86
	0%	0%	0%	0%
grade 2 events	3630	3765	3215	3025
	2%	2%	2%	2%
grade 3 events	1479	1511	1392	1361
	1%	1%	1%	1%
grade 4 events	1301	1389	1396	1377
	1%	1%	1%	1%
grade 5 events	4658	4859	4275	5150
	3%	3%	3%	3%
grade 6 events	2783	3278	2610	2670
	2%	2%	1%	2%
grade 7 events	102336	103776	118345	113511
	84%	82%	86%	85%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-0123	ACIS-0123	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	84.074426	84.07465130357119	Subarray requested	NONE	NONE
[deg] Pointing Dec	34.159679	34.13206435511309	Alternating exposures requested	N	N
[deg] Pointing Roll	240.000317	240.2088824746903	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-233.592463	-233.5874344608287			
[mm] SIM translation stage offset	0	-0.005018542100998502			
[s] Observation start time (MET)	662242684.184000	662241542.2230099			
Observation start date	2018-12-26T20:16:55	2018-12-26T19:59:02			
[s] Observation end time (MET)	662260684.184000	662261700.89921			
Observation end date	2018-12-27T01:16:55	2018-12-27T01:35:00			
Read mode	TIMED	TIMED			

## 2.3 Aspect





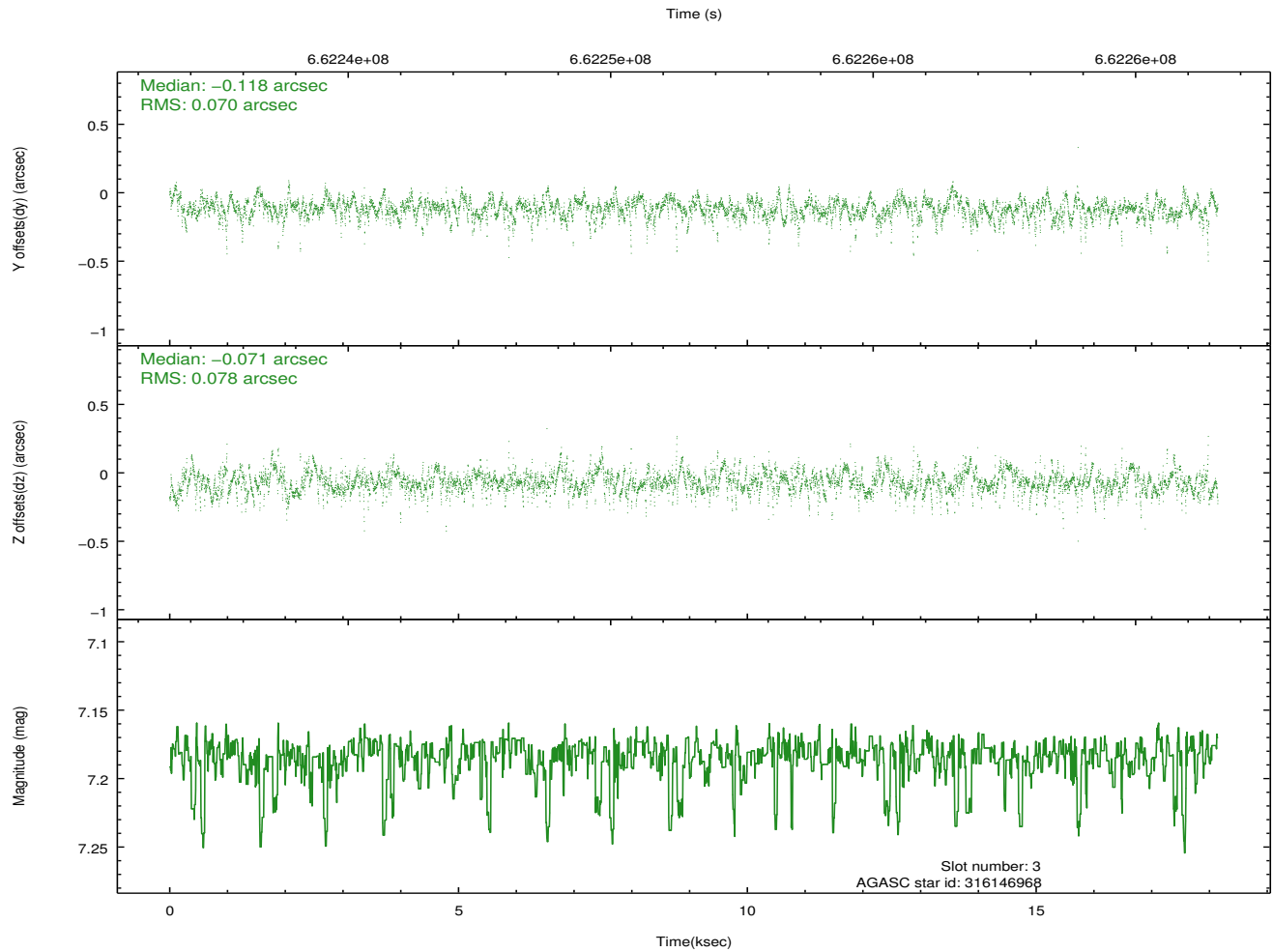
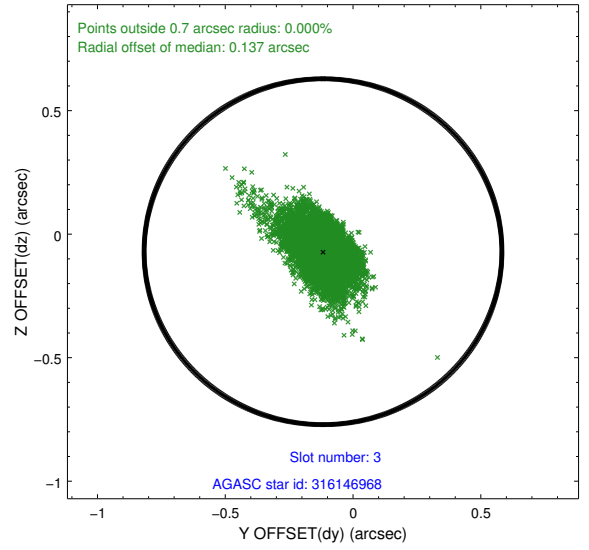
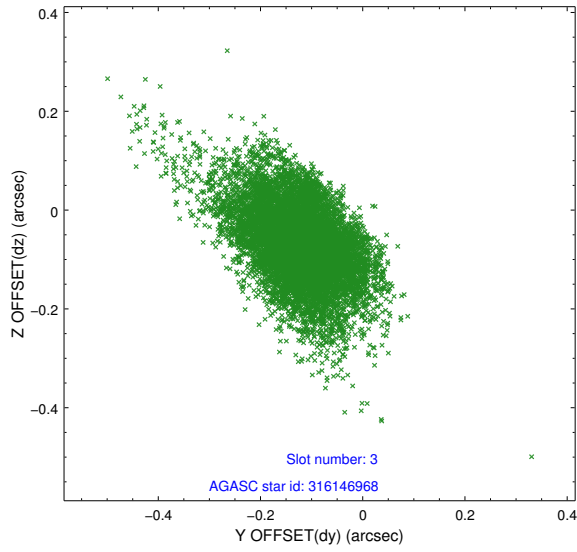
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-I-1	7.22	4423	1.000	0.123	-0.138	0.014	0.051	0.000000	0.000000	923.04	-844
1	FID		ACIS-I-5	7.21	4426	1.000	-0.563	0.005	0.011	0.028	0.000000	0.000000	-1825.82	1052
2	FID		ACIS-I-6	7.22	4425	1.000	0.351	0.203	0.013	0.022	0.000000	0.000000	388.32	1697
3	GUIDE	used	316146968	7.18	8851	1.000	-0.118	-0.071	0.104	0.189	85.013487	34.289009	-1810.93	2179
4	GUIDE	used	316154696	8.94	8842	1.000	-0.024	0.132	0.144	0.250	85.011245	34.394890	-2135.97	1980
5	GUIDE	used	316155560	8.34	8849	1.000	0.003	0.090	0.137	0.218	83.723134	34.282728	137.78	-1126
6	GUIDE	used	316156896	7.36	8853	1.000	-0.069	0.113	0.102	0.176	83.543505	34.217630	606.86	-1474
7	GUIDE	used	316027440	9.01	8841	1.000	0.215	-0.260	0.249	0.424	83.112095	33.895491	2250.99	-2020

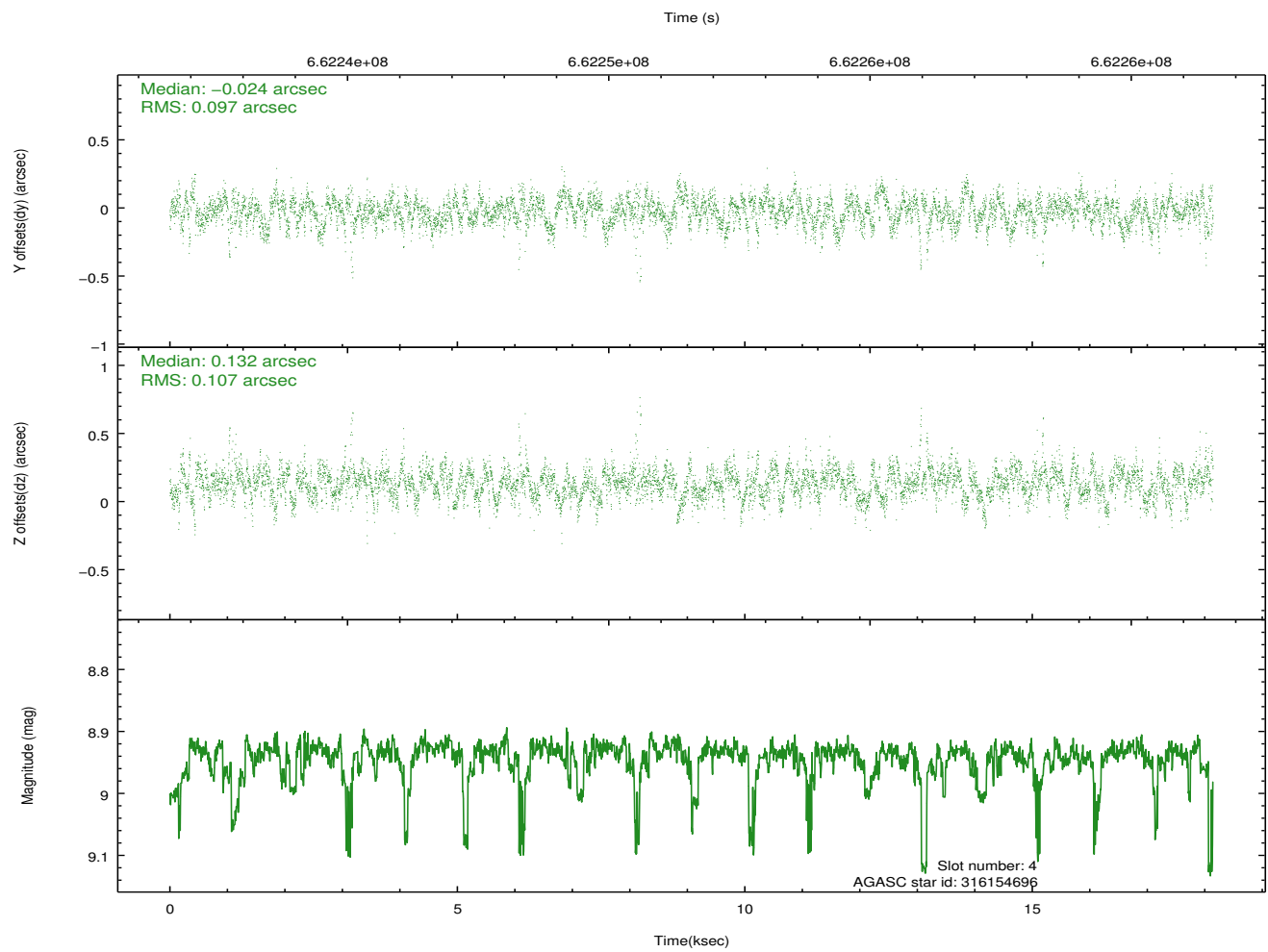
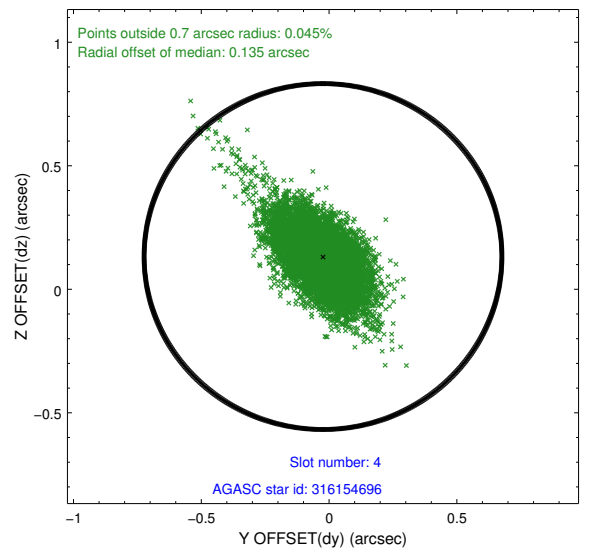
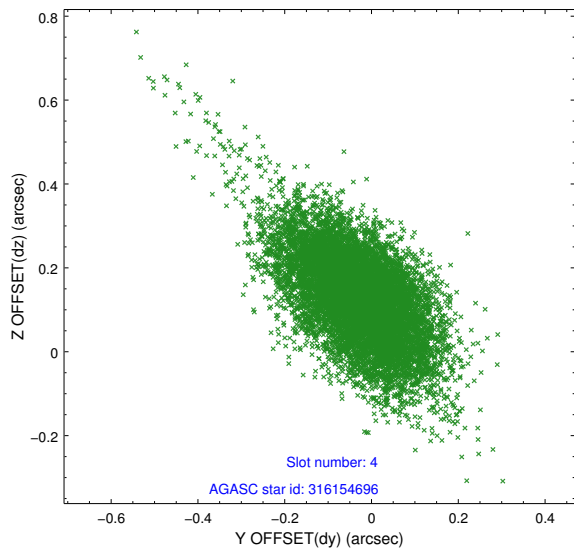
∞

## 2.4 Star Slots

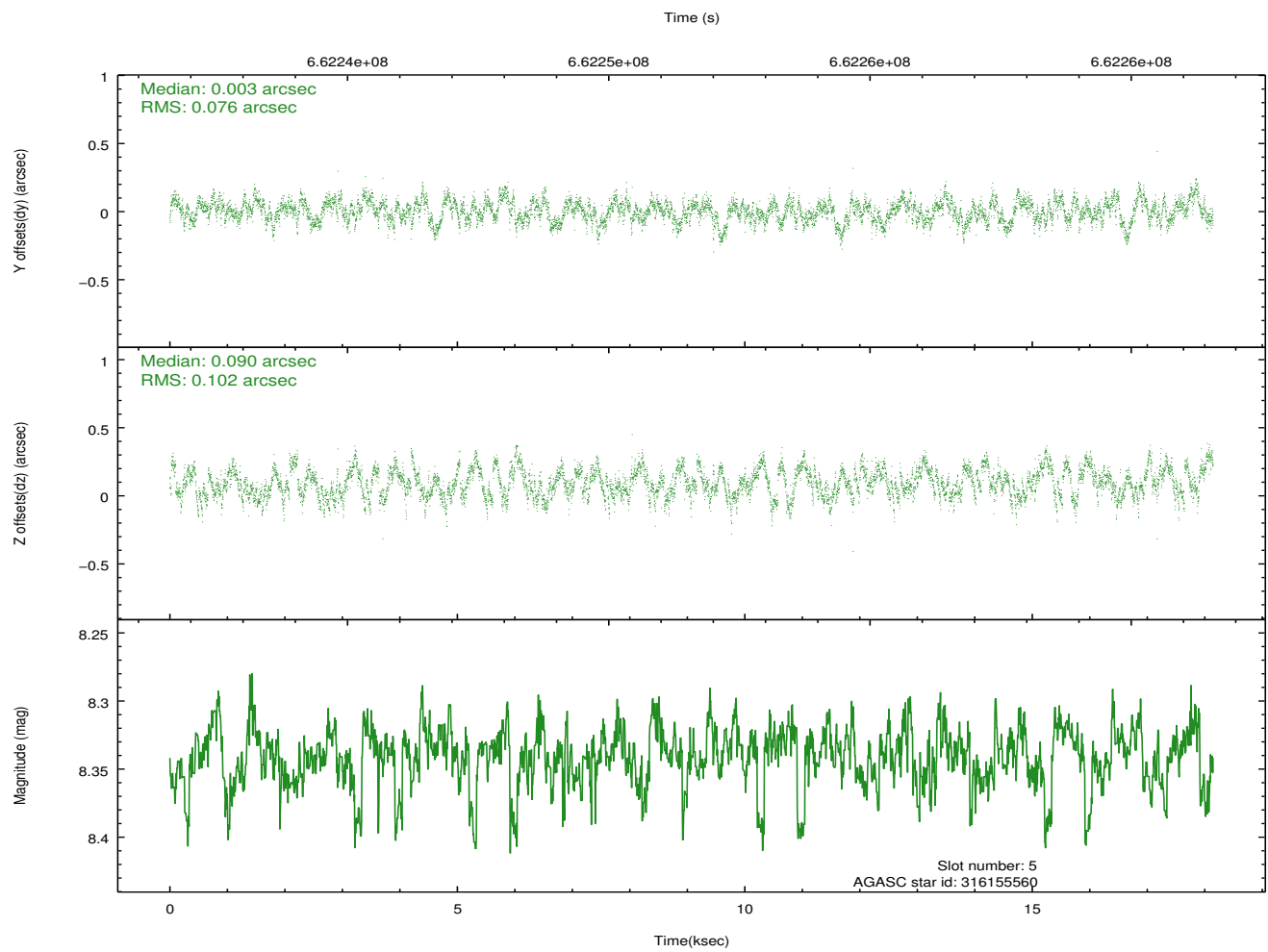
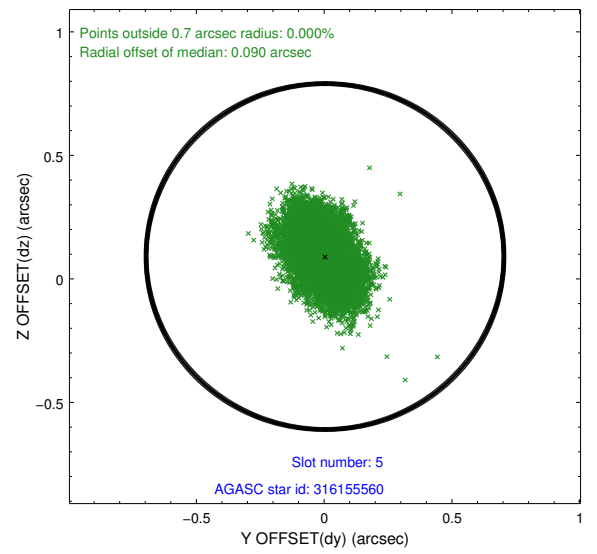
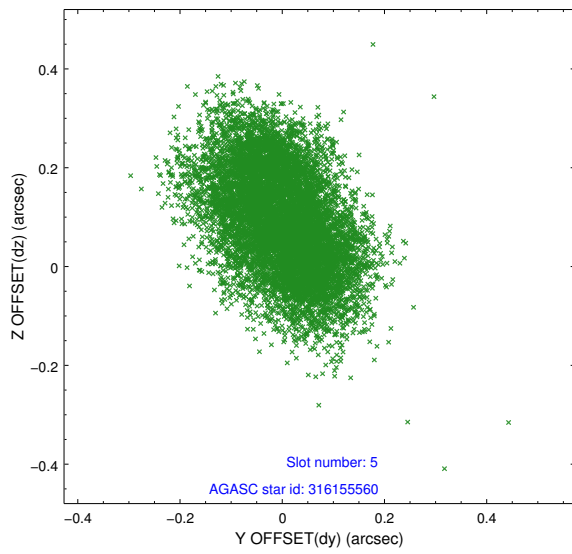
### 2.4.1 Slot 3



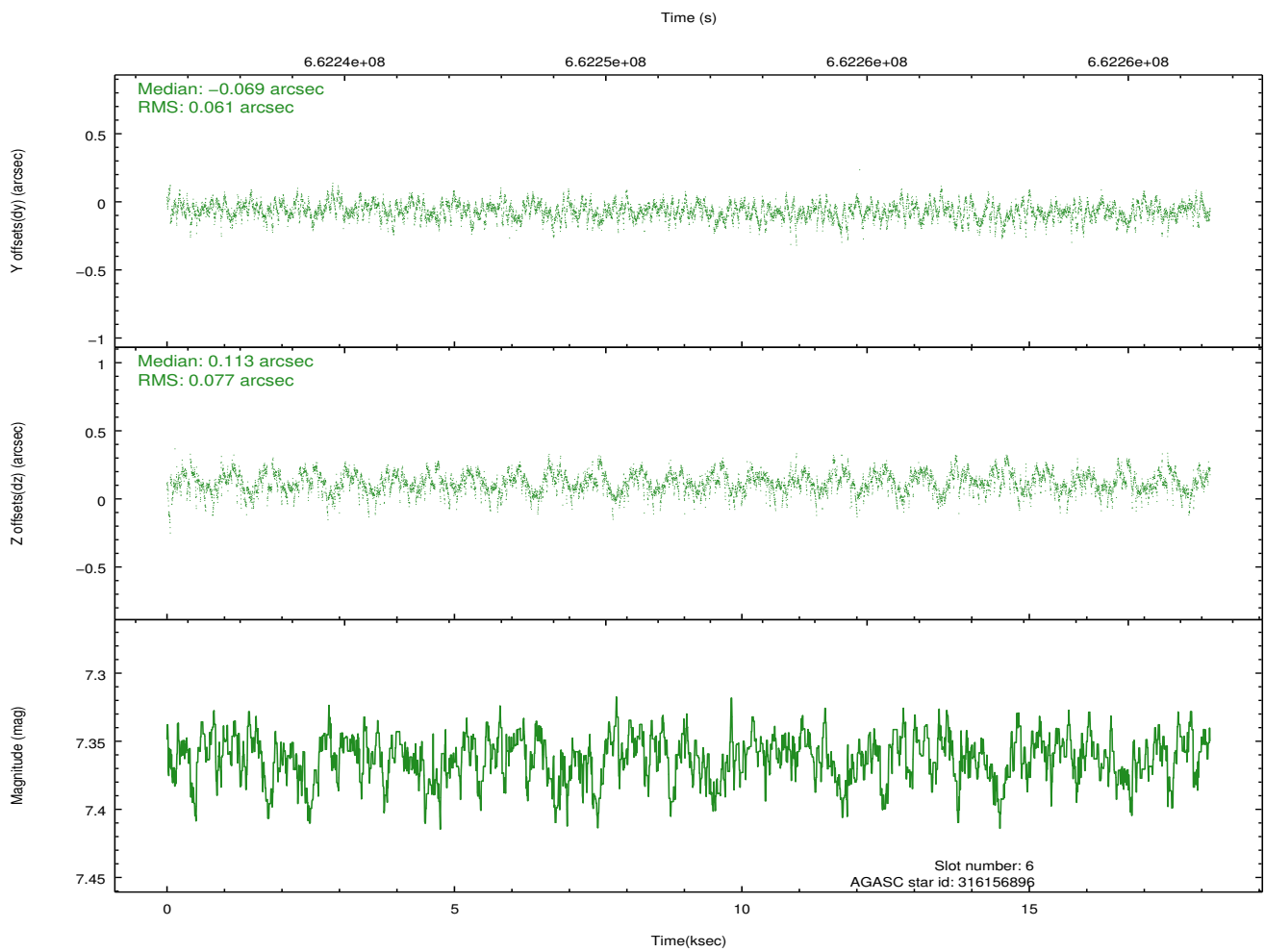
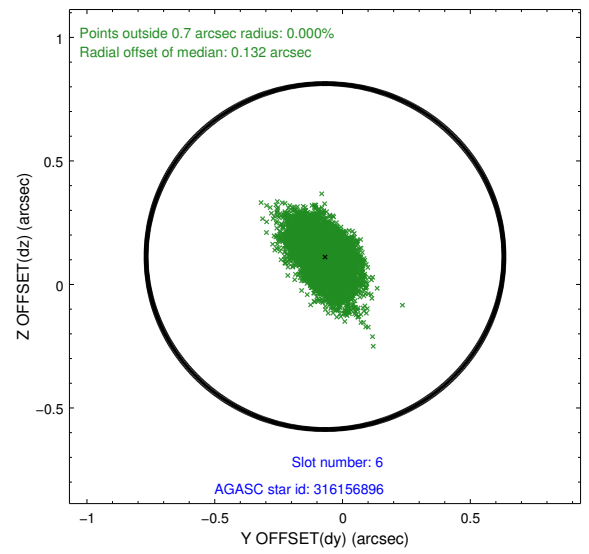
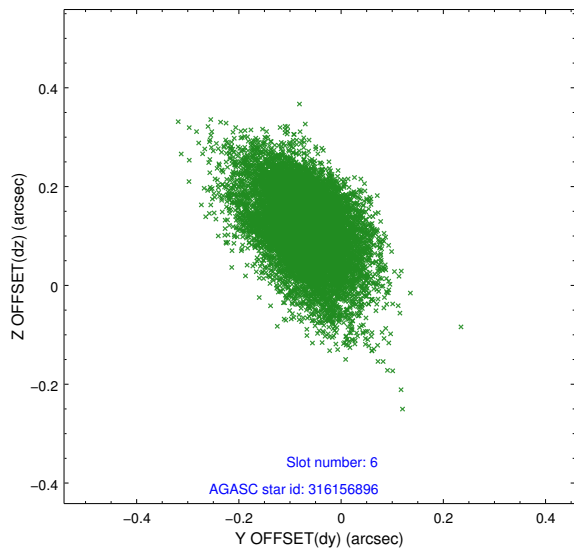
## 2.4.2 Slot 4



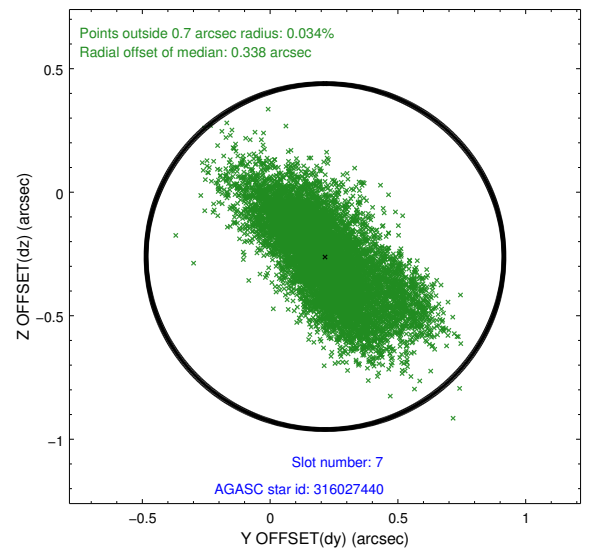
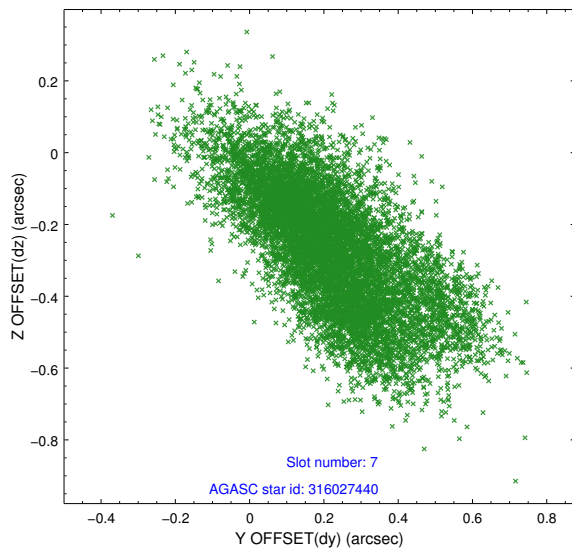
### 2.4.3 Slot 5



## 2.4.4 Slot 6



## 2.4.5 Slot 7



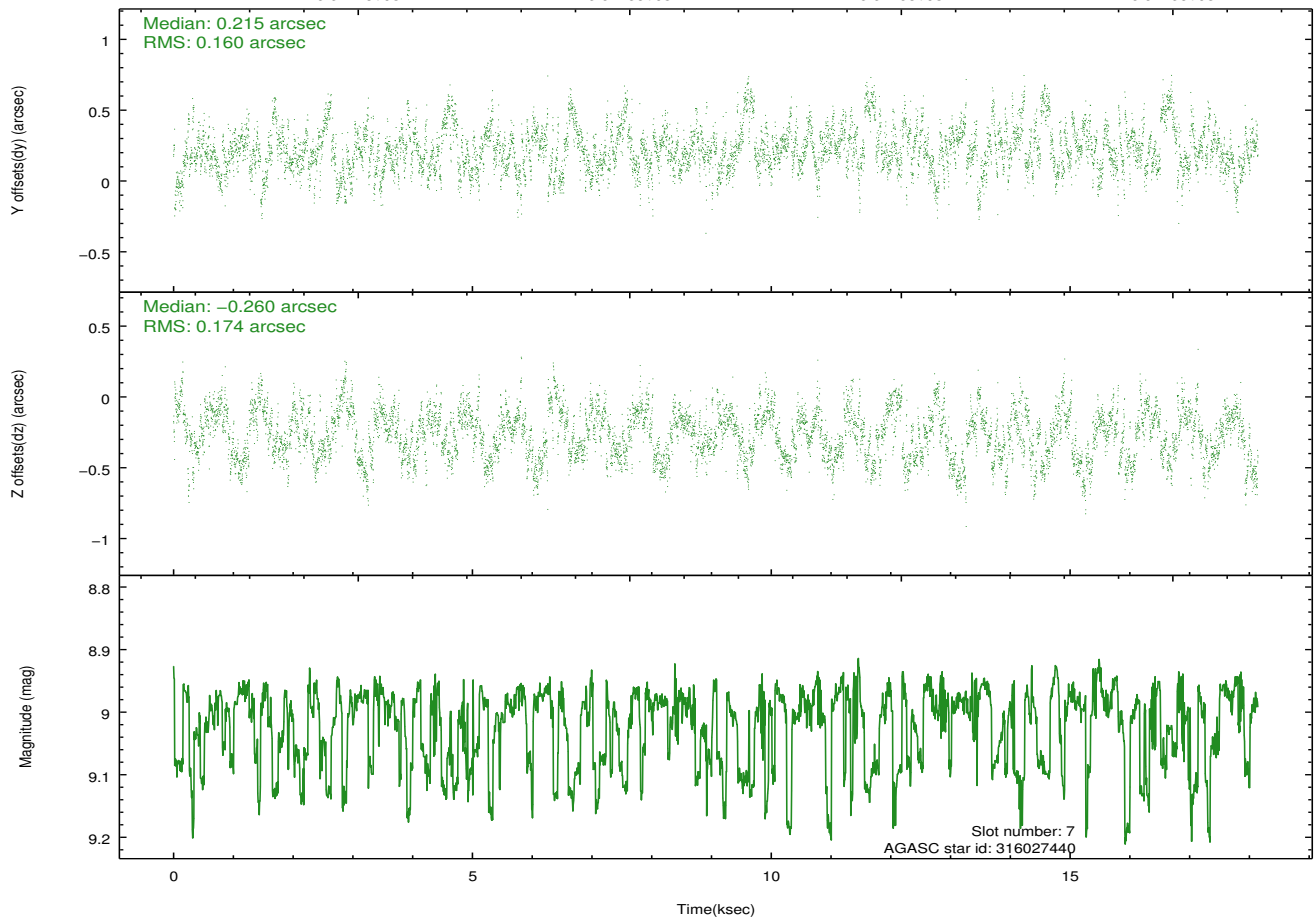
Time (s)

6.6224e+08

6.6225e+08

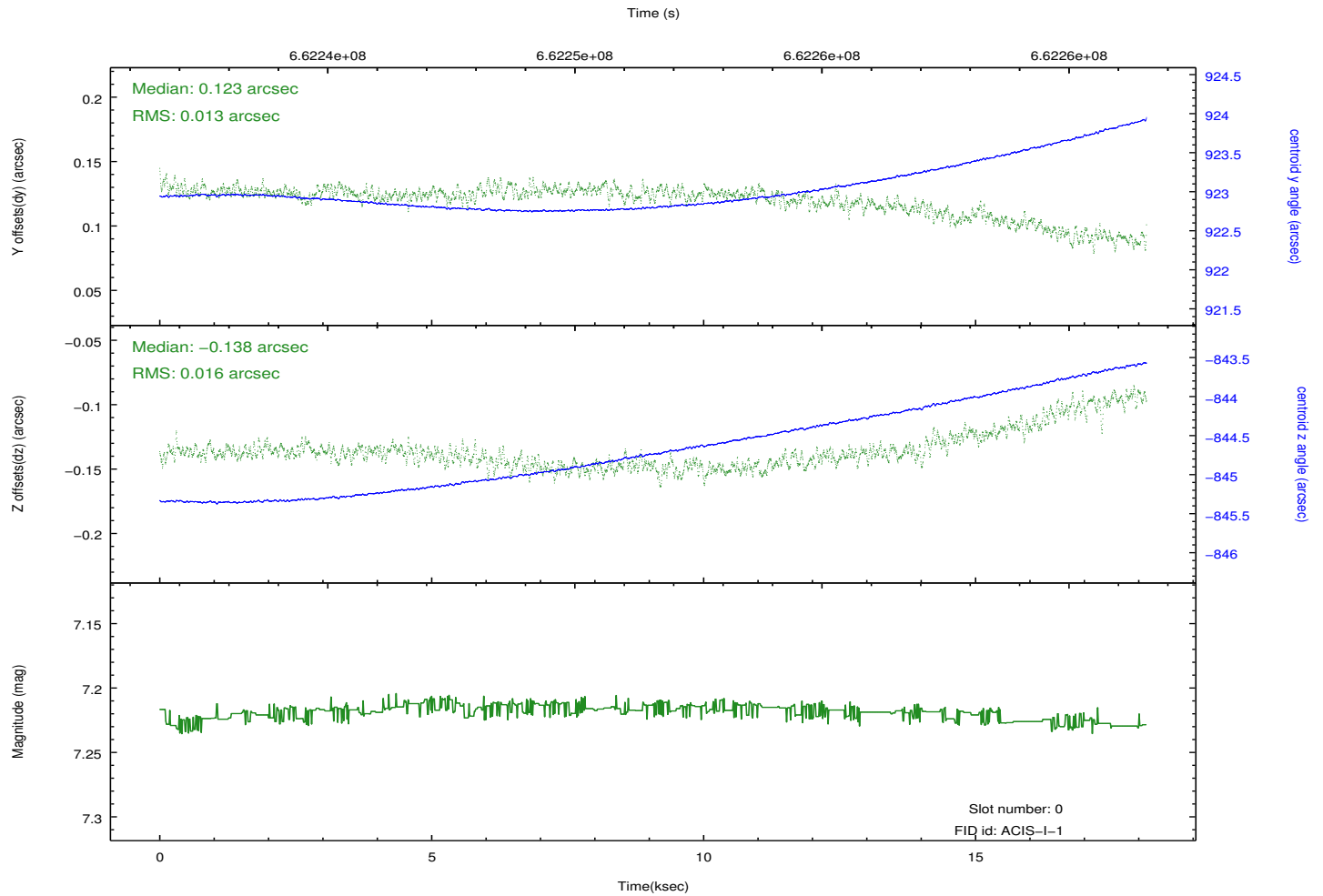
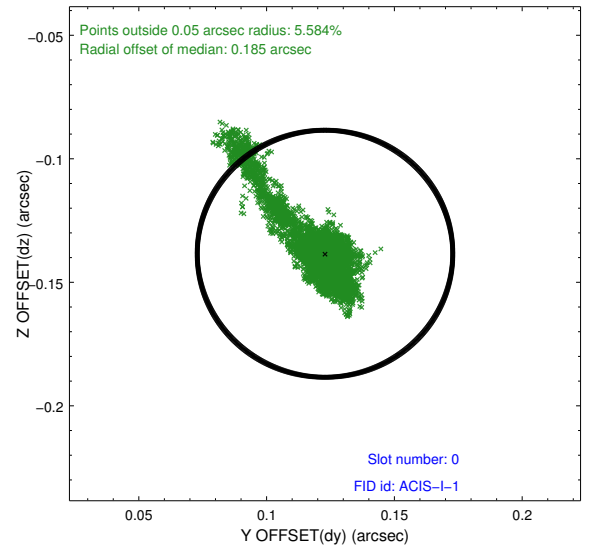
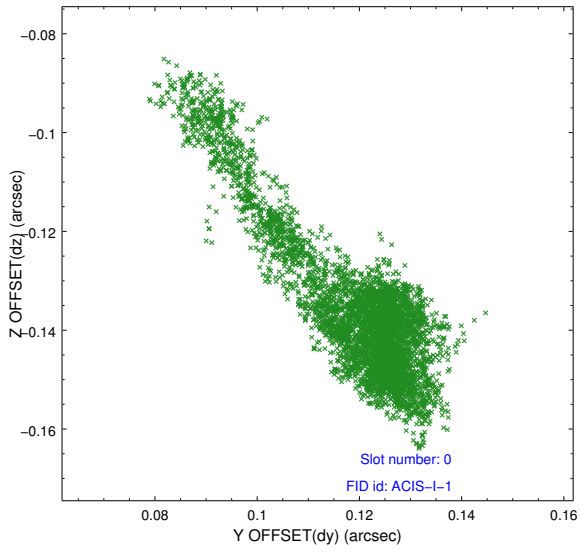
6.6226e+08

6.6226e+08

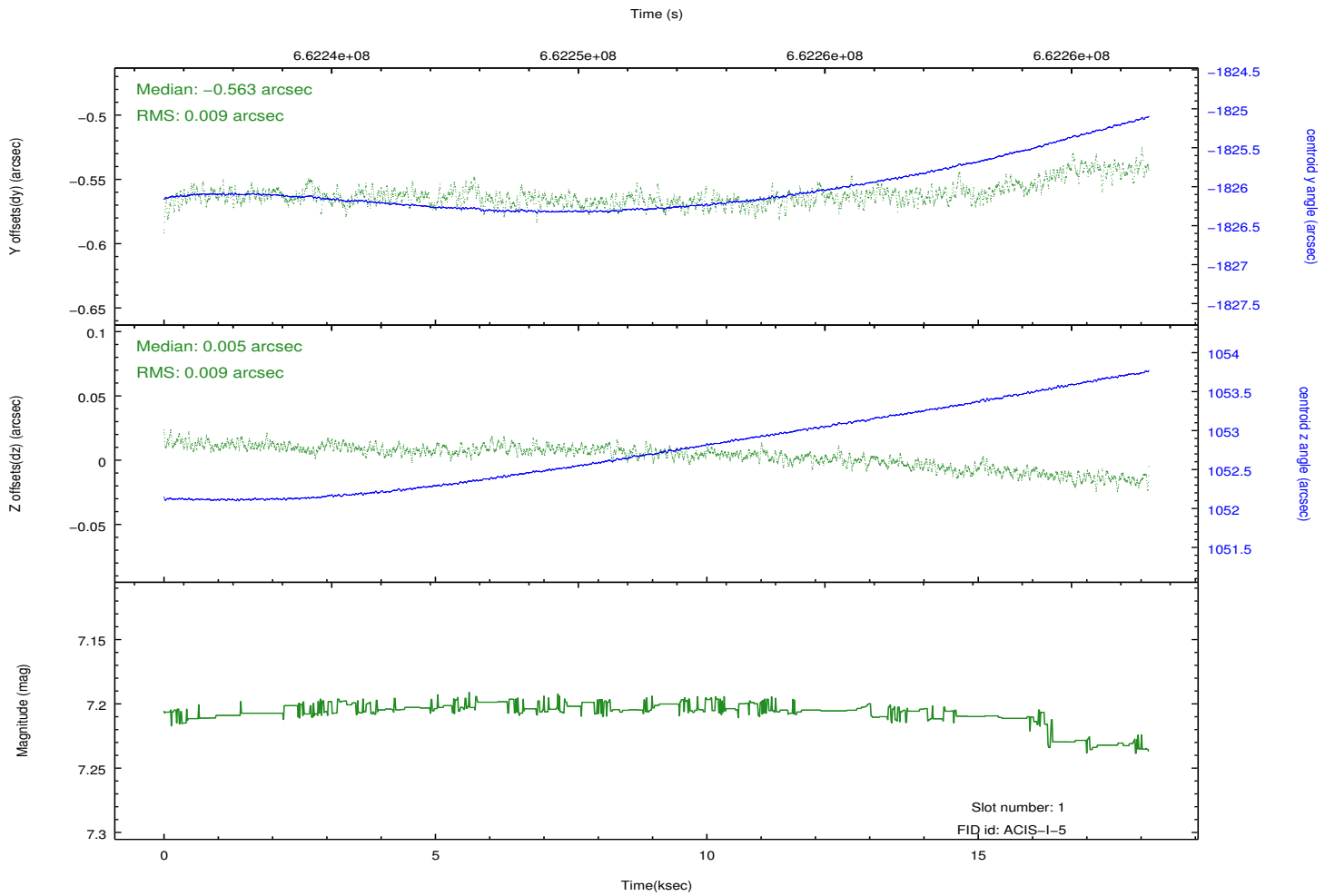
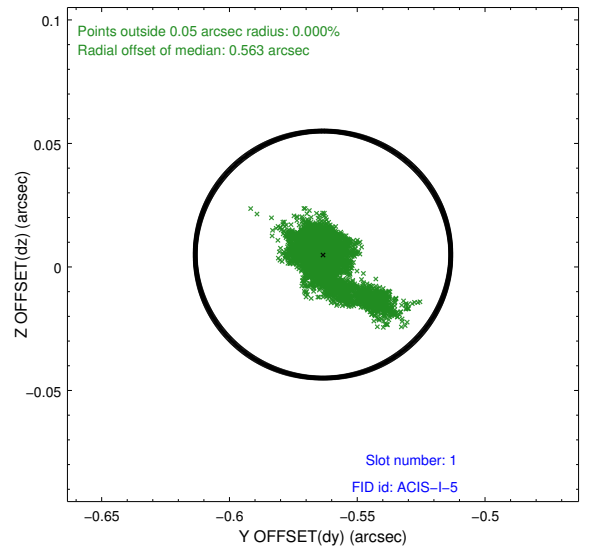
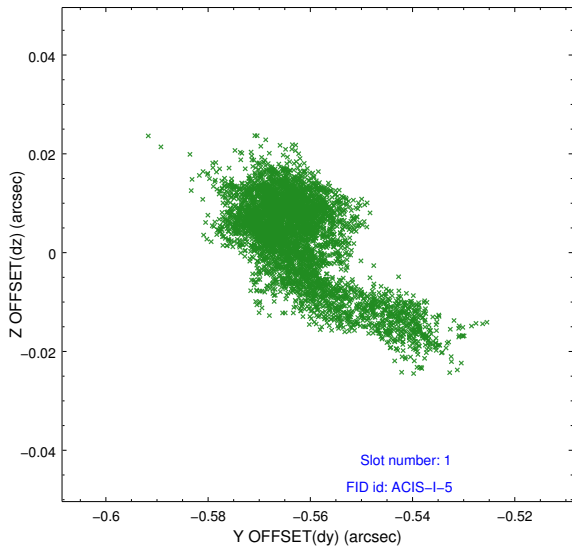


## 2.5 FID Slots

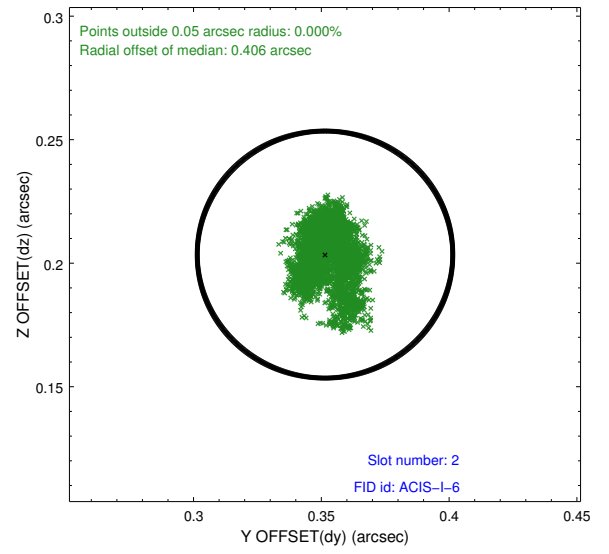
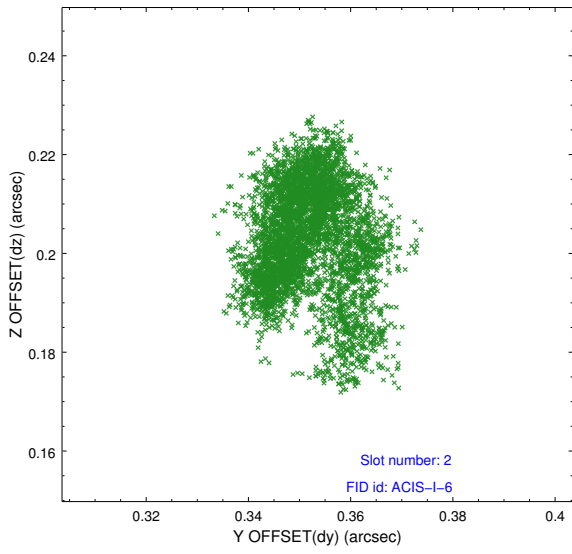
### 2.5.1 Slot 0



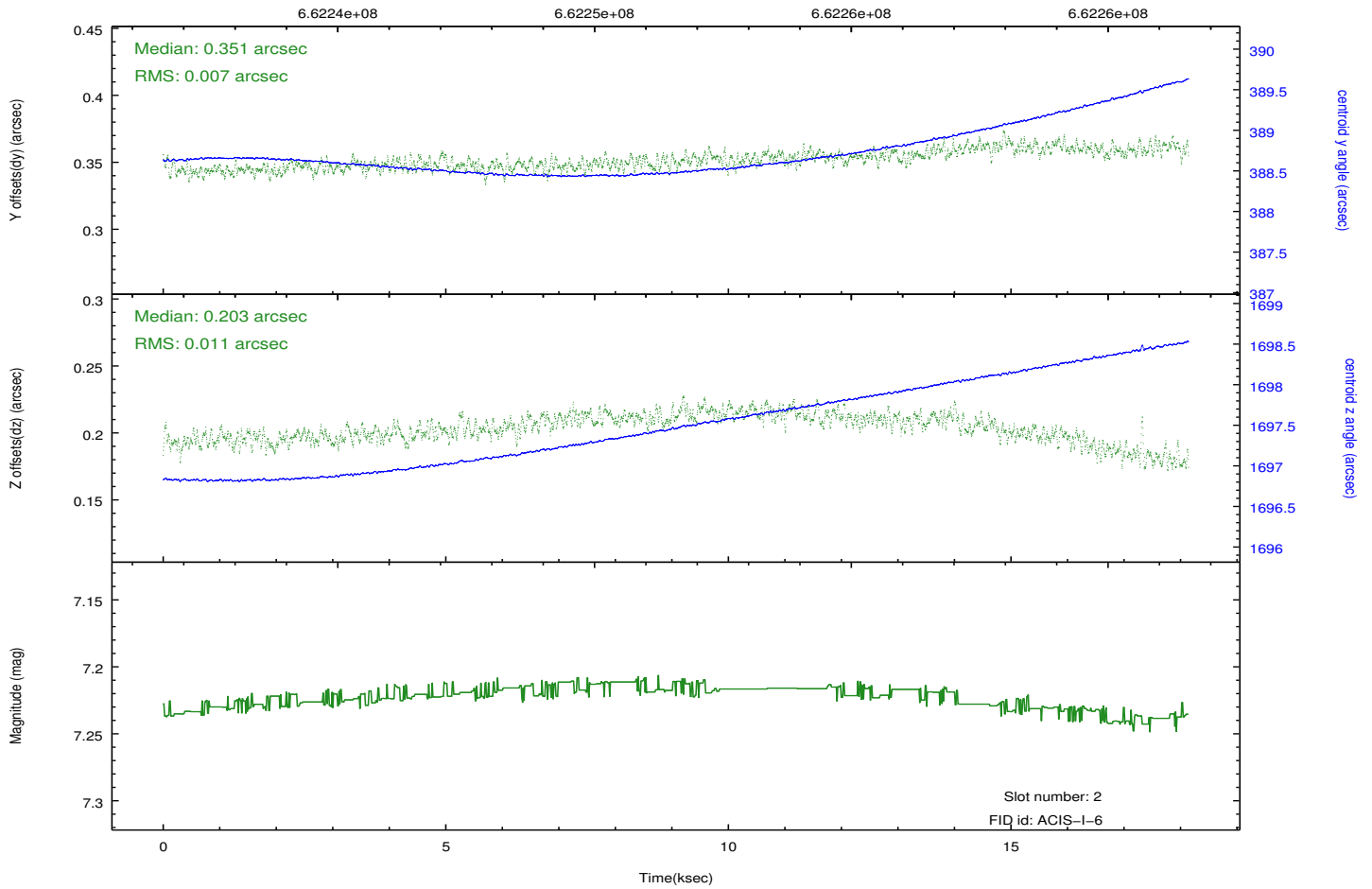
## 2.5.2 Slot 1



### 2.5.3 Slot 2



Time (s)



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.12.28
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18.069818148613

## A.2 Comments

A spatial region of the original bias map for CCD = 1 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small ( $\sim 20$  eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 1 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (84.09496,34.21614), (84.09081,34.21809), (84.05021,34.15941), (84.05436,34.15745).